CLAIMS

What is claimed as the invention is:

1. A method for obtaining a population of differentiated cells, comprising:
   a) isolating cells from the inner cell mass of a human blastocyst;
   b) forming colonies comprising undifferentiated cells from the isolated blastocyst cells;
   c) passaging cells from the colonies into a culture environment that is essentially free of feeder cells;
   d) culturing the passaged cells in the culture environment that is essentially free of feeder cells; and
   e) differentiating the cultured cells into a population comprising lineage restricted cells or terminally differentiated cells.

2. The method of claim 1, wherein the cells are differentiated by withdrawing serum, serum replacement, or a growth factor from the growth environment.

3. The method of claim 1, wherein the cells are differentiated by adding retinoic acid, butyrate, DMSO, or a growth factor to the growth environment.

4. The method of claim 1, wherein the cells are differentiated by culturing on a solid surface that promotes differentiation.

5. The method of claim 1, wherein the cells are differentiated through the formation of embryoid bodies.

6. The method of claim 1, wherein the cells are differentiated without forming embryoid bodies.

7. The method of claim 1, wherein the cells are differentiated into neural precursor cells.

8. The method of claim 1, wherein the cells are differentiated into neuronal cells or glial cells.

9. The method of claim 1, wherein the cells are differentiated into fibroblasts.

10. The method of claim 1, wherein the cells are differentiated into hepatocytes.

11. The method of claim 1, wherein the population obtained is at least ~80% lineage restricted cells or terminally differentiated cells.

12. The method of claim 7, wherein the population obtained is at least ~50% neural cells.

13. The method of claim 8, wherein the population obtained is at least ~50% neuronal cells.

14. The method of claim 9, wherein the population obtained is at least ~50% fibroblasts.

15. The method of claim 10, wherein the population obtained is at least ~50% hepatocytes.